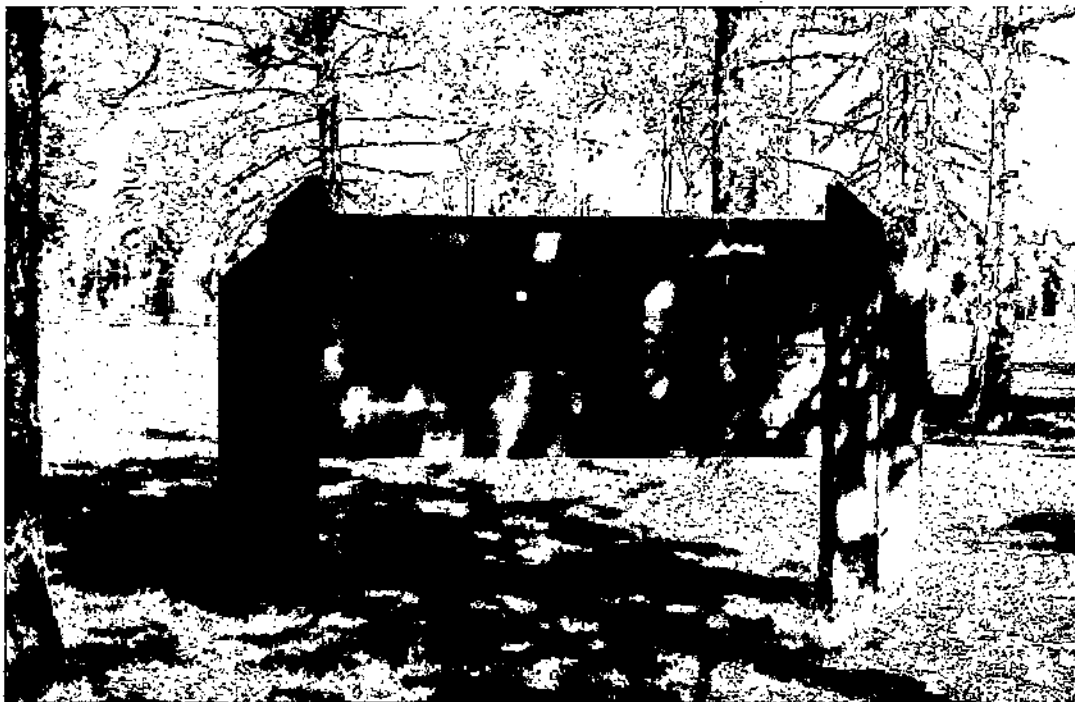


ADMINISTRATIVE  
RECORD

# Contaminant Screening Study Libby Asbestos Site, Operable Unit 4 Libby, Montana

## Final Sampling and Analysis Plan Addendum For the Cabinet View Country Club

August 2004



## *Sampling and Analysis Plan Addendum*



August 16, 2004

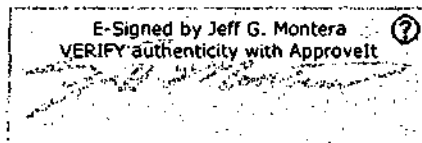
Mr. John McGuiggin, P.E.  
U.S. Department of Transportation  
Volpe National Transportation Systems Center  
55 Broadway, DTS-33, Kendall Square  
Cambridge, Massachusetts 02142

Subject: Libby, Montana Asbestos Project  
Contract No. DTRS57-99-D-00017, Task Order No. 29  
Final Sampling and Analysis Plan Addendum for the Cabinet View Country Club

Dear Mr. McGuiggin:

CDM is pleased to submit the Final Sampling and Analysis Plan Addendum for the Cabinet View Country Club (CVCC). This plan details the site-specific requirements to conduct remedial investigation activities at the CVCC. If you have any questions or comments regarding this report, please call me at (720) 264-1116.

Very truly yours,



Jeff Montera  
Project Manager  
CDM Federal Programs Corporation

cc: M. Raney, Volpe Center  
J. Christiansen, EPA Region 8  
Jim Mee, Cabinet View Country Club  
T. Wall, CDM Cambridge

**FINAL**

**Final Sampling and Analysis Plan Addendum  
For the Cabinet View Country Club**

**Libby, Montana Asbestos Project**

**August 16, 2004**

**Contract No. DTRS57-99-D-00017  
Task Order No. 29**

*Prepared for:*

**U.S. Department of Transportation  
Research and Special Programs Administration  
John A. Volpe National Transportation Systems Center  
Environmental Engineering Division, DTS-33  
55 Broadway, Kendall Square  
Cambridge, Massachusetts 02142**

*Prepared by:*

**CDM** Federal Programs Corporation  
One Cambridge Place  
50 Hampshire Street  
Cambridge, Massachusetts 02139


FINAL

**Final Sampling and Analysis Plan Addendum  
For the Cabinet View Country Club**

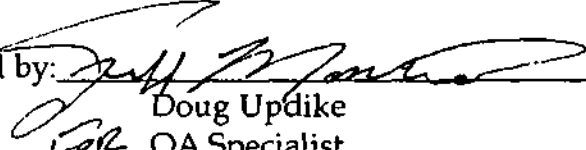
**Libby, Montana Asbestos Project**

**August 16, 2004**

**Contract No. DTRS57-99-D-00017  
Task Order No. 29**

Prepared by:  Date: 8/16/04  
Jeff Montera  
CSF Task Manager

Reviewed by:  Date: 8/16/04  
Geoff McKenzie  
Libby Project Engineer

Reviewed by:  Date: 8/16/04  
Doug Updike  
For QA Specialist

**CDM**

# Contents

## Section 1 Introduction

1.1	Site Location and Background .....	1-1
1.2	Objective.....	1-1

## Section 2 Field Activities

2.1	Verbal Interview .....	2-1
2.2	Visual Inspection .....	2-2
2.3	Soil Sampling.....	2-2
2.3.1	Previous Sampling.....	2-3
2.3.2	Sample Locations and Collection .....	2-3
2.3.2.1	Tee Boxes .....	2-3
2.3.2.2	Bunkers .....	2-3
2.3.2.2	Greens.....	2-3
2.3.2.4	Parking Lot .....	2-4
2.4	Quality Assurance (QA)/Quality Control (QC) .....	2-4
2.5	Field Form Completion and Feature/Structure Sketch.....	2-4
2.6	Decontamination.....	2-5

## Section 3 Sample Preparation and Analysis

## Section 4 Data Validation

## Section 5 References

# Figures

1-1	CVCC Site Features and Sample Location Map
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# Attachments

1	Field Forms and Results from the June 4, 2004 CVCC Sampling Event
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# Acronyms

bgs	below ground surface
CDM	CDM Federal Programs Corporation
CSF	close support facility
CSS	contaminant screening study
CVCC	Cabinet View Country Club
EDD	electronic data deliverable
EPA	U. S. Environmental Protection Agency
FSDS	field sample data sheet
GPS	global positioning system
LA	Libby amphibole
PLM	polarized light microscopy
QA	quality assurance
QC	quality control
RI	remedial investigation
SAP	sampling and analysis plan
SOPs	standard operating procedures
SPP	soil preparation plan
SRC	Syracuse Research Corporation
VCI	vermiculite containing insulation

# Section 1

## Introduction

This addendum outlines the site-specific requirements to conduct remedial investigation (RI) activities at the Cabinet View Country Club (CVCC) in Libby, Montana (site). All rationale, data quality objectives, quality assurance procedures, and standard operating procedures (SOPs) from the contaminant screening study (CSS) sampling and analysis plan (SAP) Revision 1 (CDM Federal Programs Corporation [CDM] 2003b) still apply.

### 1.1 Site Location and Background

The CVCC is situated southeast of Libby. The address for the Site is:

378 Cabinet View Country Club Rd  
Libby, MT 59923

The CVCC property contains the following features as presented in Figure 1-1:

- Nine-hole Golf Course
- Club House
- Parking Lot
- Pump House
- Equipment Sheds

### 1.2 Objective

The objective of this SAP addendum is to present and discuss a site-specific visual inspection, verbal interview, and surface and subsurface soil sampling plan for the CVCC. This information will be subsequently used as part of the RI conducted at the Libby Asbestos Site, Operable Unit 4.

## Section 2

### Field Activities

In accordance with the CSS SAP Revision No. 1, property activities will consist of a verbal interview, visual inspection, and soil sampling.

#### 2.1 Verbal Interview

A verbal interview to discuss concerns and obtain historical information about the CVCC was conducted between CDM and Mr. Jim Mee (Chairman of the Board of Directors) and Mr. Mike Collar (Golf Course Superintendent) on June 3, 2004. The following details were discussed during the interview:

##### Golf Course

###### *Tee Boxes:*

- No visible vermiculite has been observed by CVCC staff in any of the tee boxes, however, this has not been confirmed by CDM
- All of the tee boxes were constructed using natural soils
- The maximum depth needed for any future repair of the tee boxes is eight inches

###### *Fairways:*

- No visible vermiculite has been observed by CVCC staff in or on any of the fairways, however, this has not been confirmed by CDM

###### *Bunkers:*

- A total of 11 bunkers are located on the golf course
- No visible vermiculite has been observed by CVCC staff in any of the bunkers, however, this has not been confirmed by CDM
- The maximum depth of each bunker is 12 inches
- Bunker sand is obtained from a local sand and gravel pit
- A stockpile of bunker sand is stored on the CVCC property

###### *Greens:*

- Material believed to be vermiculite has been observed by CVCC staff on #4 and #7 greens during routine pin placement, however, this has not been confirmed by CDM
- The greens are constructed of 12 inches of loam on top of natural soil
- The maximum depth needed to reach native soil is 12 inches

##### Club House

- The club house consists of the following: upstairs - pro-shop, club room, and restrooms; downstairs - large locker room, small locker room, office, and restrooms
- No vermiculite containing insulation (VCI) has been observed by CVCC staff in the club house, however, this has not been confirmed by CDM

- The club house was insulated in the late 1960's to early 1970's with reused foam insulation, originally used during the construction of the Libby dam to keep the concrete warm during the winter.

#### Gravel Parking Lot

- No visible vermiculite has been observed by CVCC staff in the parking lot, however, this has not been confirmed by CDM

#### Pump House

- The pump house is located west of the #2 fairway, near the road (Figure 1-1)
- VCI has been observed by CVCC staff in the pump house attic, however the observation has not been confirmed by CDM
- Vent on the side of the pump house structure will allow access for visual inspection

#### Equipment Sheds

- No VCI has been observed by CVCC staff in any of the equipment sheds on the property, however, this has not been confirmed by CDM
- None of the equipment sheds are insulated

## 2.2 Visual Inspection

The field team will conduct an inspection for visible vermiculite of all sub-areas (i.e., golf course, club house, parking lot, pump house, and equipment sheds). If soils containing visible vermiculite or VCI are observed during the inspection, the team will record specific details in the field logbook and on the property sketch portion of the information field form. Information to be recorded will include:

- Location of the material
- Approximate volume (by estimating and noting the location length, width, and depth)
- Depth observed during sampling
- Estimated percentage of product
- Anecdotal estimates of how long the contaminated source material has existed on the property

## 2.3 Soil Sampling

The soil sampling process will involve the following steps:

- Locate the predetermined sample location and select composite subsample locations
- Collect sub-samples from composite locations
- Complete the sample field forms (e.g., record subsample composite locations) and sketch additional structures, features, etc. not already on the site map

- Decontaminate all nondisposable sampling equipment

CDM will coordinate with CVCC personnel regarding repair of sample locations following the investigation.

### 2.3.1 Previous Sampling

On June 4, 2004, CDM conducted soil sampling of the #3 tee box per the U.S. Environmental Protection Agency's (EPA's) request. CVCC had informed the EPA of impending repairs to the #3 tee box, therefore, the EPA requested that CDM determine the contents of the tee box before the repairs were made.

Two samples (CS-18555 and CS-18556) were collected from the upper and lower tee box, respectively (Figure 1-1). Both samples were collected from the 0-8 inch interval. No visible vermiculite was observed in either sample or to an exploratory depth of 12 inches. Samples were processed at CDM's close support facility (CSF) in Denver in accordance with the soil preparation plan (SPP) (CDM 2004). Samples were analyzed by polarized light microscopy (PLM) in accordance with Syracuse Research Corporation (SRC)-LIBBY-03 Revision 0 (SRC 2003a). CS-18555 had trace amounts (<0.2%) of Libby Amphibole (LA) and CS-18556 was non-detect for LA. Logbook notes, field sample data sheets (FSDS), and electronic data deliverables (EDDs) from this effort can be found in Attachment 1.

### 2.3.2 Sample Locations and Collection

To select the soil sampling locations, the CVCC was divided into four different areas: tee boxes, bunkers, greens, and the parking lot. All proposed sampling activities have been confirmed by the CVCC management. Sample locations are mapped on Figure 1-1. The following sections describe the sample locations and the rationale for selecting the locations.

#### 2.3.2.1 Tee Boxes

One five-point composite surface soil sample will be collected on each tier of each tee box (except for the previously sampled #3 tee box). Sample depths will extend from the surface to approximately eight inches below ground surface (bgs). If visible vermiculite appears to extend below eight inches, visual inspection will continue in six-inch increments until vermiculite is no longer observed or to a maximum depth of 36 inches. All samples will be collected in accordance with procedures identified in the CSS SAP Revision 1 (CDM 2003b).

A minimum of eight tee boxes will be sampled as part of this effort. Additional samples may be added if other tee boxes are identified during the investigation (e.g., red tees are placed on a distinctly separate tee box).

#### 2.3.2.2 Bunkers

A visual inspection of the 11 bunkers will be conducted. Considering all of the bunkers are filled with the same sand and are constructed of native soils, none of the bunkers will be sampled. Instead, a minimum of one five-point composite sample

will be collected from the bunker sand stockpile. Sampling locations will be chosen at random by field personnel. Sampling will be conducted in accordance with procedures identified in the CSS SAP Revision 1 (CDM 2003b).

For planning purposes one bunker sand stockpile sample will be collected. Additional samples may be warranted depending on the size and/or number of sand stockpiles.

### 2.3.2.3 Greens

Two co-located samples (one surface and one subsurface) will be collected from every green. Each sample will consist of five subsamples: one from the center of the green and four from the edges of the green in each direction (i.e., north, south, east, and west). Surface soil samples will extend from the surface to approximately 12 inches bgs. Subsurface soil samples will extend from 12 inches to 24 inches bgs. If visible vermiculite appears to extend below 24 inches, visual investigation will continue in six-inch increments until vermiculite is no longer observed or to a maximum depth of 36 inches. All samples will be collected using a 5/8 inch slide hammer or equivalent. Sampling will be conducted in accordance with procedures identified in the CSS SAP Revision 1 (CDM 2003b).

A total of 11 greens will be sampled as part of this effort, including the green on each of the nine holes, the alternate green on hole #2, and the practice green next to the club house.

### 2.3.2.4 Parking Lot

Two five-point composite surface soil samples will be collected from the CVCC gravel parking lot. Sample depths will extend from the surface to approximately six inches bgs. If visible vermiculite appears to extend below six inches, visual inspection should continue in six-inch increments until vermiculite is no longer seen or to a maximum depth of 36 inches. All samples will be collected in accordance with procedures identified in the CSS SAP Revision 1 (CDM 2003b).

## 2.4 Quality Assurance (QA)/Quality Control (QC)

Two types of QA/QC samples will be collected as part of this sampling effort. They are field equipment blanks (sand), and field duplicates (soil). All QA/QC samples will be collected in accordance with, and at the frequency described, in the CSS SAP Revision 1 (CDM 2003b). All other QA/QC processes and procedures outlined in the CSS SAP Revision 1 apply.

## 2.5 Field Form Completion and Feature/Structure Sketch

For each sample collected, a FSDS will be completed. Each form will identify the name(s) of CDM personnel collecting the sample, sample identification numbers, and location of subsamples. The forms will be completed in accordance with SOP CDM-LIBBY-03, Revision 1 (CDM 2003a). The sample identification number associated with the sample point will be in the form of CS-#####. For each sample collected, a

**CDM**

2-4

global positioning system (GPS) point will be recorded from the center location of the subsamples. The other subsample locations will be identified using a compass and measuring instrument. For each of these non-center subsample locations, the distance and direction from the center location will be recorded. Any obstacles or reasons for movement or deletion of a sample or subsample will be recorded on the field form. Additionally, any structure or other relevant feature (e.g., building, pathway) not already on the site figures will be sketched onto a copy of the site figure or sample form.

## 2.7 Decontamination

All decontamination will be conducted in accordance with the CSS SAP Revision 1 (CDM 2003b). All non-disposable sampling equipment will be decontaminated between sample locations but will not be decontaminated between subsample locations.

## Section 3

# Sample Preparation and Analysis

All soil samples will be shipped to CDM's CSF in Denver to be processed in accordance with the SPP (CDM 2004) prior to analysis. In summary, soil samples are dried in a standard laboratory oven and split into a preparation sample and an archive sample. The preparation sample is sieved to separate coarse material ( $> 1/4$  inch) from fine material ( $< 1/4$  inch). The fine material is ground to a standard particle size (approximately 250 microns) and analyzed by PLM in accordance with SRC-LIBBY-03 Revision 0 (SRC 2003a). The coarse material is examined by stereomicroscopy to determine if any large particles of asbestos are present in accordance with SRC-LIBBY-01 Revision 1 (SRC 2003b).

## Section 4

# Data Validation

Data quality evaluation will be performed in accordance with the CSS SAP Revision 1 (CDM 2003b).

## Section 5

### References

CDM. 2003a. Project Specific Guidance: Completion of Field Sample Data Sheets (FSDS), CDM-LIBBY-03-Revision 1. April.

\_\_\_\_\_. 2003b. Final Sampling and Analysis Plan, Remedial Investigation, Contaminant Screening Study, Revision 1. May

\_\_\_\_\_. 2004. Close Support Facility, Soil Preparation Plan (Revision No. 1). March

Syracuse Research Corporation (SRC). 2003a. Analysis of Asbestos Fibers in Soil by Polarized Light Microscopy. SRC-LIBBY-03 (Rev. 0). March 3, 2003

\_\_\_\_\_. 2003b. Qualitative Estimation of Asbestos in Coarse Soil by Visual Examination Using Stereomicroscopy and Polarized Light Microscopy. SRC-LIBBY-01 (Rev. 1). May 20, 2003

# Figures

**CDM**

**TARGET SHEET**  
EPA REGION VIII  
**SUPERFUND DOCUMENT MANAGEMENT SYSTEM**

DOCUMENT NUMBER: 2023065

SITE NAME: LIBBY ASBESTOS

DOCUMENT DATE: 08/16/2004

**DOCUMENT NOT SCANNED**

Due to one of the following reasons:

- ☐ PHOTOGRAPHS
- ☐ 3-DIMENSIONAL
- ☒ OVERSIZED
- ☐ AUDIO/VISUAL
- ☐ PERMANENTLY BOUND DOCUMENTS
- ☐ POOR LEGIBILITY
- ☐ OTHER
- ☐ NOT AVAILABLE
- ☐ TYPES OF DOCUMENTS NOT TO BE SCANNED  
(Data Packages, Data Validation, Sampling Data, CBI, Chain of Custody)

**DOCUMENT DESCRIPTION:**

FIGURE 1-1 Cabinet View Country Club Features and Previous/  
Proposed Soil Sampling Locations

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**Attachment 1**  
**Field Forms and Results from**  
**the June 4, 2004 CVCC**  
**Sampling Event**

**CDM**

Location Cabinet View Country Club Date 6-4-04 77

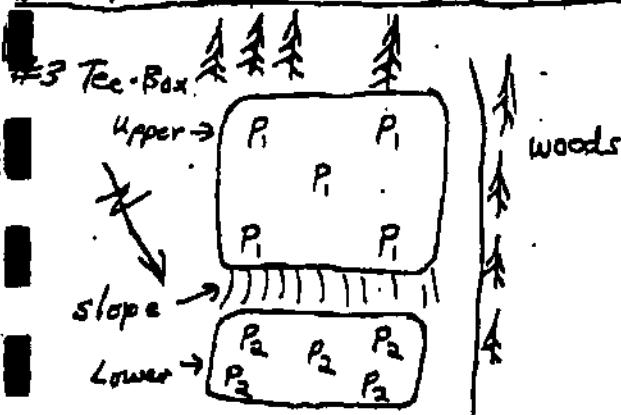
Project / Client Likely Asbestos US EPA Region 8  
Cabinet View Country Club

0902: Arrive @ golf course to conduct soil sampling on the hole #3 tee-box.

All work IAW CSS SAP Revision 1, 2003, B. Sharp (author) and T. Sesti on-site.

No L.H. is observed in the soils of the upper or lower teebox at hole #3. The material in question was obviously micaceous native sand, produced from glacial deposits. Soil samples on FSDS-000164 are as follows:

Property (P1)	CS-18555	Hole #3
Upper tee-box	SP-124957	
Property (P2)	CS-18556	Hole #3
Lower tee-box	SP-124958	



6/5 612 [T5A06044]-all points collected

## LIBBY FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL

Field Logbook No: 100329 Page No: 77 Sampling Date: 6-4-04  
 Address: 328 Cabinet View Rd. Owner/Tenant: Cabinet View Country Club  
 Business Name: Cabinet View Golf Course  
 Land Use: Residential School Commercial Mining Roadway Other ( )  
 Sampling Team: MACTEC CDM Other \_\_\_\_\_ Names: B. Shroy, Tony Sisti

Data Item	Sample 1	Sample 2	Sample 3
Index ID	<b>CS- 18555</b>	<b>CS- 18556</b>	
Location ID	<b>SP- 124957</b>	<b>SP- 124958</b>	
Sample Group	<u>Property (P<sub>1</sub>)</u>	<u>Property (P<sub>2</sub>)</u>	
Location Description (circle) -	Back yard Front yard Side yard Driveway Other <u>#3 tee-box (upper)</u>	Back yard Front yard Side yard Driveway Other <u>#3 tee-box (lower)</u>	Back yard Front yard Side yard Driveway Other _____
Category (circle)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____
Type (circle)	Grab <u>Comp</u> # subsamples <u>5</u>	Grab <u>Comp</u> # subsamples <u>5</u>	Grab Comp # subsamples _____
Sample Time	<u>0922</u>	<u>0930</u>	
Top Depth (in.)	<u>0</u>	<u>0</u>	
Bottom Depth (in.)	<u>8</u>	<u>8</u>	
Field Comments: Note if vermiculite is visible in sampled area	BD- <u>NA</u> <u>No L.V. observed in sample</u>	BD- <u>NA</u>	BD- _____
Entered (LFO) _____	Volpe: _____ Entered _____ Validated _____	Volpe: _____ Entered _____ Validated _____	Volpe: _____ Entered _____ Validated _____

For Field Team Completion  
(Provide initials)

Completed by BS

QC by \_\_\_\_\_

FILE NAME

RESI 106081 PLM VE.xls

## PLM VISUAL ESTIMATION DATA RECORDING SHEET

Laboratory Name

RESI

Job Number

106081

Date Received

6/11/2004

SOP Name/Revision

SRC-Libby-03-Rev0

Spreadsheet version

1d

Data Entry by G. Vetrano

Checked by J. Orr 6-15-2004

EPA Index ID	Index Suffix ID	OA Type (see ISI)	Lab Sample ID	Date Analyzed	Analyst Name	Sample Appearance	Ref Material (B or T)	Libby Amphibole (LA)			Other Amphibole (OA)			Chrysotile (Ch)		Deviation?	Comments
								Qual	LA-MF (%)	Bin	Qual	OA-AF (%)	OA Type (see ISI)	Qual	Ch-AF (%)		
CS-18555	FG1	Not OA	890752	6/16/2004	RSW	Tan sol. fine	ISTM	TR		B1	NO			NO			
CS-18556	FG1	Not OA	890753	6/16/2004	RSW	Tan sol. fine	ISTM	ND		A	ND			NO			